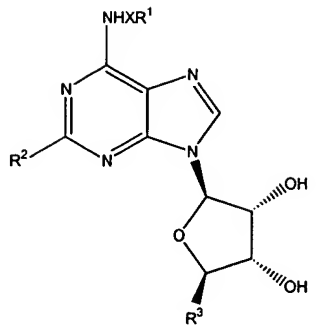
WHAT IS CLAIMED IS:

1. A compound of the formula:



Formula I

wherein:

R^1 is optionally substituted lower alkyl, optionally substituted cycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

X is a covalent bond or optionally substituted alkylene;

R^2 is R^4-Z-Y-C≡C- or optionally substituted pyrazolyl:

in which Y is optionally substituted alkylene, Z is oxygen, sulfur or -NH-, and R^4 is optionally substituted aryl or optionally substituted heteroaryl; and

R^3 is hydroxymethyl or -C(O)-NR^5R^6;

in which R^5 and R^6 are independently hydrogen or lower alkyl.

2. The compound of claim 1, wherein R^2 is optionally substituted pyrazol-1-yl.

3. The compound of claim 2, wherein R^1 is optionally substituted alkyl or optionally substituted aryl and R^3 is hydroxymethyl.

4. The compound of claim 3, wherein R^2 is pyrazo-1-yl substituted by optionally substituted lower alkyl, ester, aminocarbonyl, optionally substituted aryl, or optionally substituted heteroaryl.

5. The compound of claim 4, wherein pyrazol-1-yl is substituted by optionally substituted phenyl or optionally substituted benzyl.

6. The compound of claim 5, wherein R^1 is optionally substituted lower alkyl and X is a covalent bond.

7. The compound of claim 6, wherein R^1 is methyl and R^2 is 4-(4-methoxyphenyl)pyrazol-1-yl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-{2-[4-(4-methoxyphenyl)pyrazolyl]-6-(methylamino)purin-9-yl}oxolane-3,4-diol.

8. The compound of claim 6, wherein R^1 is n-propyl and R^2 is 4-(4-methoxyphenyl)pyrazol-1-yl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-{2-[4-(4-methoxyphenyl)pyrazolyl]-6-(n-propylamino)purin-9-yl}oxolane-3,4-diol.

9. The compound of claim 6, wherein R^1 is methyl and R^2 is 4-(4-chlorobenzylaminocarbonyl)pyrazol-1-yl, namely (1-{9-[(4S,2R,3R,5R)-3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl]-6-(methylamino)purin-2-yl}pyrazol-4-yl)-N-(4-chlorophenyl)carboxamide.

10. The compound of claim 6, wherein R^1 is methyl and R^2 is 4-(4-chlorobenzylaminocarbonyl)pyrazol-1-yl, namely (1-{9-[(4S,2R,3R,5R)-3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl]-6-(methylamino)purin-2-yl}pyrazol-4-yl)-N-(4-chlorophenyl)carboxamide.

11. The compound of claim 4, wherein R^2 is pyrazo-1-yl substituted by optionally substituted heteroaryl.

12. The compound of claim 11, wherein R^1 is n-propyl and R^2 is 4-(pyrid-2-yl)pyrazol-1-yl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-[4-(pyridin-2-yl)pyrazolyl]-6-(n-propylamino)purin-9-yl}oxolane-3,4-diol.

13. The compound of claim 5, wherein R^1 is optionally substituted aryl and X is alkylene.

14. The compound of claim 13, wherein R^1 is 3-iodobenzyl and R^2 is 4-(4-methoxyphenyl)pyrazol-1-yl, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-{2-[4-(4-methoxyphenyl)pyrazolyl]-6-(3-iodobenzylamino)purin-9-yl}oxolane-3,4-diol.

15. The compound of claim 1, wherein R^2 is optionally substituted pyrazol-4-yl.

16. The compound of claim 15, wherein R^1 is optionally substituted alkyl or optionally substituted aryl, R^3 is hydroxymethyl, and X is a covalent bond.

17. The compound of claim 16, wherein R^1 is methyl, R^2 is 1-benzylpyrazol-4-yl, R^3 is hydroxymethyl, and X is a covalent bond, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-{2-[1-benzylpyrazolyl]-6-(methylamino)purin-9-yl}oxolane-3,4-diol.

18. The compound of claim 16, wherein R^1 is n-propyll, R^2 is 1-benzylpyrazol-4-yl, R^3 is hydroxymethyl, and X is a covalent bond, namely (4S,2R,3R,5R)-5-(hydroxymethyl)-2-{2-[1-benzylpyrazolyl]-6-(n-propylamino)purin-9-yl}oxolane-3,4-diol.

19. The compound of claim 1, wherein R^2 is R^4-Z-Y-C≡C-.

20. The compound of claim 19, wherein R^4 is optionally substituted phenyl and Y is alkylene of 1-3 carbon atoms.

21. The compound of claim 20, wherein R^4 is phenyl optionally substituted by methoxy or chloro, and Y is methylene.

22. The compound of claim 21, wherein R^1 is optionally substituted alkyl, X is a covalent bond, and R^3 is hydroxymethyl.

23. The compound of claim 22, wherein R^1 is methyl, R^4 is phenyl and Z is oxygen, namely 2-hydroxymethyl-5-[6-methylamino-2-(3-phenoxypropyn-1-yl)purin-9-yl]-tetrahydrofuran-3,4-diol.

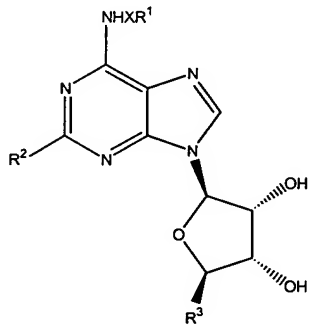
24. A method of treating a disease state in a mammal that is alleviable by treatment with a A_3 adenosine receptor agonist, comprising administering to a mammal in need thereof a therapeutically effective dose of a compound of claim 1.

25. The method of claim 24, wherein the disease state is cancer.

26. The method of claim 24, wherein the disease state is neutropenia.

27. A pharmaceutical composition comprising at least one pharmaceutically acceptable excipient and a therapeutically effective amount of a compound of claim 1.

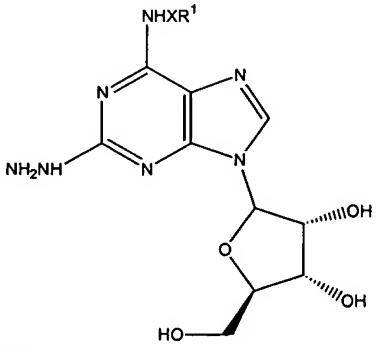
28. A process for the preparation of a compound of Formula I:



in which R^2 is optionally substituted pyrazol-1-yl;

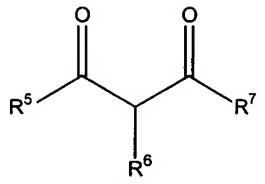
comprising:

contacting a compound of the formula:



(3)

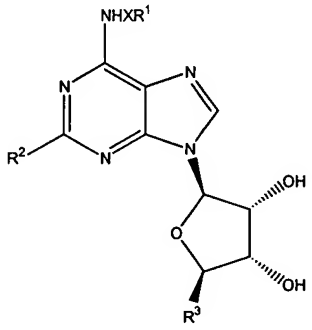
with a compound of formula:



(4)

29. The process of claim 28, wherein the reaction is conducted in an inert solvent chosen from methanol, ethanol, n-propanol, isopropanol, and t-butanol.

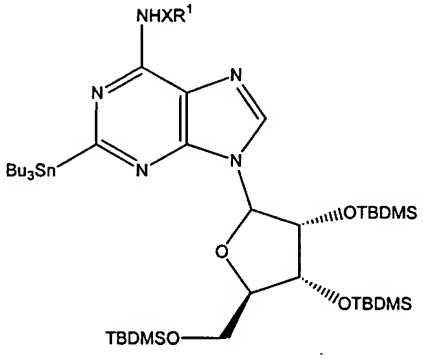
30. A process for the preparation of a compound of Formula I:



in which R^2 is optionally substituted pyrazol-4-yl;

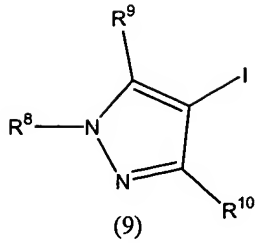
comprising

contacting a compound of the formula:



(8)

with a compound of the formula:



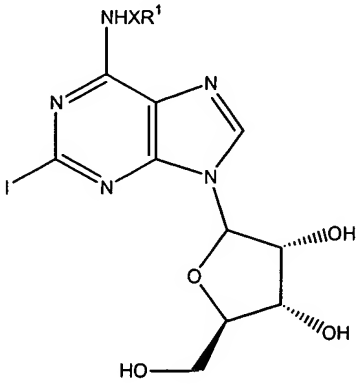
(9)

in the presence of a palladium complex and a copper salt in an inert solvent, and contacting the product with a mild acid.

31. The process of claim 30, wherein the palladium complex is $Pd(PPh_3)_4$, the copper salt is CuI, the inert solvent is N,N-dimethylformamide, and the mild acid is ammonium fluoride.

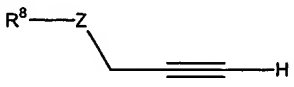
32. A process for the preparation of a compound of claim 1, in which R^2 is R^4-Z-Y-C≡C-; comprising:

contacting in an inert solvent a compound of the formula:



(12)

with a compound of the formula:



(13)

in the presence of a mild base, a copper salt and a palladium catalyst.

33. The process of claim 32, wherein the inert solvent is N, N-dimethylformamide, the base is triethylamine, the copper salt is copper iodide, and the palladium catalyst is dichlorobis-(triphenylphosphine)palladium(II).

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